

of Fuchikami et al. relating to a method for producing fluorine-containing saturated aliphatic carboxylic acid esters, alkoxy fluorine-containing propionic acid ester is not produced. In this regard, please see item 1 of the attached Declaration of Kenji Tokuhisa, one of the present inventors. Accordingly, with regard to the last paragraph on page 4 of the Office Action, when the yield is compared, the present invention should only be compared with that disclosed in Matteoli et al., not with that disclosed in Fuchikami et al.

In Table 1 on page 289 of Matteoli et al., the yield for fluorine-containing acrylic acid esters when only amine is used as the base was in the range of 16 to 36%, whereas that for alkoxy fluorine-containing propionic acid ester was in the range of 32 to 49%. Conversely, in accordance with the method of the present invention, in Example 1 of the present specification, the yield for fluorine-containing acrylic acid esters was 74.9%, whereas that for alkoxy fluorine-containing propionic acid ester was 5.1%. Accordingly, the method in accordance with the present invention can produce fluorine-containing acrylic acid esters with a higher yield (which was a minor product in the Matteoli et al. method), while it can suppress the production of alkoxy fluorine-containing propionic acid ester (which was a major product in Matteoli et al.), to only a few percent. In this regard, please see item 2 of the attached Declaration. Namely, the present invention employs two types of bases in combination to control the production ratio between the two types of products, thereby significantly improving the yield of the target product, fluorine-containing acrylic acid esters. In this regard, please see the two paragraphs below the Table of the attached Declaration. This would not have been expected from the teachings of Matteoli et al.

Scheme 2 of Matteoli et al. clearly shows that the reaction with alcohol can provide fluorine-containing acrylic acid esters, whereas the reaction with secondary amine can provide N,N-disubstituted amides of fluorine-containing acrylic acids. In view of this fact, if the expression “under the same conditions” in Matteoli et al. (page 288, right column, line 19), is considered one skilled in the art can understand that tertiary amine is used commonly and alcohols are used as a starting material for acrylic acid esters, whereas secondary amines are used as a starting material for acrylic acid amides. In other words, this means there are no conditions where the three materials, including alcohol, secondary amine, and tertiary amine, are simultaneously used in Matteoli et al.

In Example 10 of Fuchikami et al., when triethylamine is used to serve as a base, fluorine-containing saturated aliphatic carboxylic acid esters are obtained with the yield of 75%. Conversely, in Example 21 of the reference, when potassium carbonate is used to serve as a base in the same reaction system, the yield is only 47%. In view of these results, if amine is used in combination with an inorganic base such as potassium carbonate in the same carbonylation reaction, one skilled in the art would not expect an improvement in yield more than the case where amine is used alone. Accordingly, the references would not motivate one skilled in the art to employ a combination of these two types of bases.

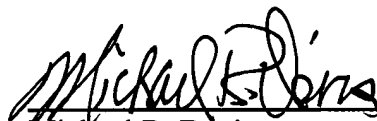
For these reasons, Applicants take the position that the presently claimed invention is clearly patentable over the applied references.

Therefore, in view of the foregoing remarks, it is submitted that the ground of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

Respectfully submitted,

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